

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A pulse ~~modulator~~ wave radar device, comprising:

a pulse generating circuit ~~that generates~~ configured to generate a periodic pulse;

a differentiating circuit ~~that differentiates~~ configured to differentiate the periodic pulse from the pulse generating circuit so as to output a differentiated wave;

an oscillating circuit ~~that generates~~ configured to generate an oscillated wave with a modulating frequency; [[and]]

a switching circuit ~~that switches whether~~ configured to output the oscillated wave from the oscillating circuit ~~is output~~ according to the differentiated wave from the differentiating circuit so as to output a modulated pulse wave;

a transmitting antenna configured to transmit the modulated pulse wave from the switching circuit;

a receiving antenna configured to receive a received wave reflected from an object;

and

a receiving circuit configured to detect the received wave from the receiving antenna so as to amplitude-demodulate to a corresponding pulse.

Claim 2 (Currently Amended): The pulse ~~modulator~~ wave radar device according to claim 1, wherein the differentiating circuit is a primary high-pass filter.

Claim 3 (Currently Amended): The pulse ~~modulator~~ wave radar device according to claim 1, further comprising a clipping circuit ~~that limits~~ configured to limit a crest value between the differentiating circuit and the switching circuit.

Claim 4 (Currently Amended): A pulse modulator, comprising:

a pulse generating circuit configured to generate ~~that generates~~ a periodic pulse;

a band-pass circuit configured to allow ~~that allows~~ a specified frequency component of the pulse from the pulse generating circuit to pass therethrough;

an oscillating circuit configured to generate ~~that generates~~ an ~~oscillate~~ oscillated wave of ~~a~~ modulating frequency; and

a switching circuit configured to output ~~that switches whether the oscillate the~~ oscillated wave from the oscillating circuit ~~is output~~ according to an output from the band-pass circuit so as to output a modulated pulse wave.

Claim 5 (Original): The pulse modulator according to claim 4, wherein the band-pass circuit is a secondary band-pass filter.

Claim 6 (Currently Amended): The pulse modulator according to claim 4, further comprising a clipping circuit configured to limit ~~that limits~~ a crest value between the band-pass circuit and the switching circuit.

Claim 7 (Canceled).

Claim 8 (Currently Amended): The pulse wave radar device according to claim [[7]]
1, further comprising a time calculating circuit ~~that detects~~ configured to detect a time from transmission of the modulated pulse wave to reception of the received wave so as to calculate round-trip propagation time up to the object.

Claim 9 (Currently Amended): The pulse wave radar device according to claim [[7]]
1, wherein the receiving circuit detects the received wave from the receiving antenna and
[[a]] the modulated pulse wave which leaks in the pulse wave radar device so as to
amplitude-demodulate to a corresponding pulse.

Claim 10 (Currently Amended): The pulse wave radar device according to claim 9,
further comprising a time calculating circuit ~~that detects~~ configured to detect an interval from
[[the]] a time the receiving circuit amplitude-demodulates the modulated pulse wave to the
corresponding pulse to [[the]] a time the receiving circuit amplitude-demodulates the
received wave to the corresponding pulse so as to calculate a round-trip propagation time up
to the object.

Claim 11 (Currently Amended): The pulse wave radar device according to claim [[7]]
1, further comprising:

a branching circuit that branches a part of the modulated pulse wave from the ~~pulse
modulator~~ switching circuit so as to output [[it]] said part of the modulated pulse,

wherein the receiving circuit detects the received wave from the receiving antenna
and the modulated pulse wave from the branching circuit so as to amplitude-demodulate to a
corresponding pulse.

Claim 12 (Currently Amended): The pulse wave radar device according to claim 11,
further comprising a time calculating circuit ~~that detects~~ configured to detect an interval from
[[the]] a time the receiving circuit amplitude-demodulates the modulated pulse wave to the
corresponding pulse to [[the]] a time the receiving circuit amplitude-demodulates the

received wave to the corresponding pulse so as to calculate a round-trip propagation time up to the object.

Claim 13 (Currently Amended): A pulse wave radar device, comprising:

~~[[the]]~~ a pulse modulator ~~according to claim 4;~~ including

a pulse generating circuit configured to generate a periodic pulse,

a band-pass circuit configured to allow a specified frequency component of the pulse from the pulse generating circuit to pass therethrough,

an oscillating circuit configured to generate an oscillated wave of a modulating frequency, and

a switching circuit configured to output the oscillated wave from the oscillating circuit according to an output from the band-pass circuit so as to output a modulated pulse wave;

a transmitting antenna ~~that transmits a~~ configured to transmit the modulated pulse wave from the pulse modulator;

a receiving antenna ~~that receives~~ configured to receive a receiving received wave reflected from an object; and

a receiving circuit ~~that detects~~ configured to detect the received wave from the receiving antenna so as to amplitude-demodulate to a corresponding pulse.

Claim 14 (Currently Amended): The pulse wave radar device according to claim 13, further comprising a time calculating circuit that detects a time from transmission of the modulated pulse wave to reception of the received wave so as to calculate round-trip propagation time up to the object.

Claim 15 (Currently Amended): The pulse wave radar device according to claim 13, wherein the receiving circuit ~~detects~~ is configured to detect the received wave from the receiving antenna and ~~[[a]] the~~ modulated pulse wave which leaks in the pulse wave radar device so as to amplitude-demodulate to a corresponding pulse.

Claim 16 (Currently Amended): The pulse wave radar device according to claim ~~[[13]]~~ 15, further comprising a time calculating circuit ~~that detects~~ configured to detect an interval from ~~[[the]] a~~ time the receiving circuit amplitude-demodulates the modulated pulse wave to the corresponding pulse to ~~[[the]] a~~ time the receiving circuit amplitude-demodulates the received wave to the corresponding pulse so as to calculate a round-trip propagation time up to the object.

Claim 17 (Currently Amended): The pulse wave radar device according to claim 13, further comprising:

a branching circuit ~~that branches~~ configured to branch a part of the modulated pulse wave from the pulse modulator so as to output ~~[[it]]~~ said part of the modulated pulse wave,

wherein the receiving circuit ~~detects~~ is configured to detect the received wave from the receiving antenna and the modulated pulse wave from the branching circuit so as to amplitude-demodulate to a corresponding pulse.

Claim 18 (Currently Amended): The pulse wave radar device according to claim ~~[[13]]~~ 17, further comprising a time calculating circuit ~~that detects~~ configured to detect an interval from ~~[[the]] a~~ time the receiving circuit amplitude-demodulates the modulated pulse wave to the corresponding pulse to ~~[[the]] a~~ time the receiving circuit amplitude-demodulates

the received wave to the corresponding pulse so as to calculate a round-trip propagation time up to the object.